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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,784	06/23/2000	Otto Hofstetter	24140	3739

7590

03/26/2002

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EXAMINER

SHIPSIDES, GEOFFREY P

ART UNIT

PAPER NUMBER

1732

DATE MAILED: 03/26/2002

10

Please find below and/or attached an Office communication concerning this application or proceeding.

MF/10

Office Action Summary

Application No.

09/529,784

Applicant(s)

HOFSTETTER ET AL.

Examiner

Geoffrey P. Shippides

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-22 is/are pending in the application.
- 4a) Of the above claim(s) 19-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 13-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 13-22 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 13-18, drawn to a method for operating a multi-component injection molding form tool.

Group II, claim(s) 19-22, drawn to a preform.

2. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical features of the invention may be found in EP0799683 A.

3. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

4. During a telephone conversation with Mr. Marvin Berkowitz on March 4, 2002 a provisional election was made with traverse to prosecute the invention of Group I, claims 3-18. Affirmation of this election must be made by applicant in replying to this Office action. Claims 19-22 withdrawn from further

consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

6. Claim 13 is objected to because of the following informalities: On line 6 of claim 13 includes the words "and_one" which appears to contain a typo and should be replaced with –and one–. Appropriate correction is required.

7. The claims are objected to because they include reference characters which are not enclosed within parentheses.

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m).

Line 32 of claim 13 includes the words "position III" and the "III" is not in parentheses. Line 2 of claim 16 includes the words "position I" and the "I" is not in parentheses.

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parentheses. Every other use of needle position indicators (I, II, III, IV) is in parentheses.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 13-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

11. Claim 13 recites the limitation "the innermost jet chamber" in lines 16, 20, 23, and 33. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 13 recites the limitation "the other components" in line 24. There is insufficient antecedent basis for this limitation in the claim.

13. Claim 13 recites the limitation "the second step" in line 28. There is insufficient antecedent basis for this limitation in the claim.

14. Claim 13 recites the limitation "the third step" in 30. There is insufficient antecedent basis for this limitation in the claim.

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15. Claims 13-18 are replete with inconsistent language that make the claims unclear and difficult to follow. For example Claim 13 includes the language of "whereby, in the first step in the cycle, the shut-off needle (37) is brought into a position (I), wherein the innermost jet chamber (3) containing component A and the outer jet chamber (5) containing component B are opened, whereby, in the first step in the cycle, only component A is conveyed through the innermost jet chamber (3) and conveyance of the other components through the one outer jet chamber (5) is stopped" which is unclear. It is unclear how the outer jet chamber containing component B is opened and also stopped. Claims 13-18 contain many instances of language like this that render the claim language confusing and unclear.

16. It is further unclear if the letter "B" generally relates to the filling material or specifically to recycled material.

17. Regarding claim 17, the phrase "particularly" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,990,301 (Krishnakumar et al. 1) in view of U.S. Patent No. 5,897,822 (van Manen et al.), and U.S. Patent No. 5,032,341 (Krishnakumar et al. 2).

Krishnakumar et al. 1 teaches a variety of methods for forming multilayered preforms (Figures) where different materials are fed through different concentric injection nozzles into a mold cavity wherein different sequences of injecting single and multiple materials at once into the mold cavity result in different configurations of the multilayered preform. Krishnakumar et al. 1 uses a multicomponent injection molding tool that features hot runner nozzles and a needle shut-off mechanism (Figure 1, Column 1, lines 18-23). Krishnakumar et al. 1 teaches that: "there are four flow passages. However, the number may be more or less as so desired." (Column 2, line 42-44). Krishnakumar et al. 1 teaches that the "gates 32, 36, 40, 44 are selectively closed in sequence by a gate pin 46 which is positioned by means of a positioning device [sic] 48 which is automatically controlled." (Column 2, lines 65-68)

With regard to claims 13-16, Krishnakumar et al. 1 teaches several embodiments where the surface forming material (PET) is injected through the center nozzle and where the surface forming material (PET) is first injected singly followed by the injection of secondary materials through more outward nozzles to form core forming materials either with or without the PET through the central nozzle continued to be injected (Figures 2A, 2B, 5A, 5B, 8A, 8B, 9A, 9B, 10A, 10B, 11A, 11B, 12A, 12B).

Krishnakumar et al. 1 does not specifically teach the use of recycled material for use as a core material but does teach the use of PET RG as a core material, but does

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not specify what constitutes PET RG. Krishnakumar et al. 2, however, in a similar process teaches the use of virgin PET for the skin forming material A and recycled PET for core forming material B (Column 3, lines 55-62). Krishnakumar et al. 2 further teaches that "material A would constitute 40-60% of the volume of the preform 24 while the material B would constitute the remainder of the volume" (Column 3, lines 63-67).

Krishnakumar et al. 1 also does not specifically teach a final step of injecting core forming material to fill the space created by material shrinkage after the first injection steps. Van Manen et al., however, teaches the addition of material to a mold cavity after the mold cavity is filled and cooled to completely fill the mold cavity following the cooling and shrinkage of the material originally used to fill the mold cavity (Figures 9 and 16, Column 8, lines 7-41).

It would have been obvious to one having ordinary skill in the art at the time of invention to produce a preform by the method as taught by Krishnakumar et al. 1 of first injecting a PET material alone through a central nozzle to form the outer layers of the preform followed by injecting a second material through a more outward nozzle to form an internal layer with the modification of allowing the material injected to cool and injecting more material into the mold cavity to fill space created by the shrinkage due to cooling of the original material injected as taught by van Manen et al. in order to create a multilayered preform with the structure as taught by Krishnakumar et al. 1 that exactly fills the mold cavity and does not have imperfections due to the shrinkage of the material during cooling. It would have been further obvious to one having ordinary skill in the art at the time of invention to use virgin PET as the outer layer forming material

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and to use recycled PET as the core forming layer as taught by Krishnakumar et al. 2 with the relative percentage of these materials as taught by Krishnakumar et al. 2 in order to reduce the material cost of the preform while maintaining the complete outer coverage of virgin material as required by food and beverage handling and packaging standards, and to use recycled material as the material injected after cooling as taught by van Manen et al. in order to avoid use of the more expensive virgin PET as the material injected after cooling will not be exposed to the inside of the preform. It would have been further obvious to one having ordinary skill in the art at the time of invention to perform the method as taught by Krishnakumar et al. 1 with the a molding tool as taught by either Krishnakumar et al. 1 or van Manen et al. and to use either mold tool in such a way as to selectively open and close different material flows in order to perform the method of Krishnakumar et al. 1 with available molding tools.

20. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,141,695 (Nakamura) in view of U.S. Patent No. 4,990,301 (Krishnakumar et al. 1), U.S. Patent No. 5,897,822 (van Manen et al.), and U.S. Patent No. 5,032,341 (Krishnakumar et al. 2).

The discussion of Krishnakumar et al. 1, van Manen et al., Krishnakumar et al. 2 above applies herein.

Nakamura teaches methods for forming layered preforms for blow-molding bottles of consumer goods. Nakamura teaches that "where a bottomed parison having a four-layered section is injection-molded, the injection of the first molten resin 6a is effected first in a manner similar to the previous description. Next, the aforesaid

injection is stopped, and the second molten resin 7a and the third molten resin 8a are concurrently injected and introduced under pressure into the first molten resin 6a.”

(Column 4, lines 40-46). Nakamura further teaches that the “the first molten resin 6a may comprise polyethyleneterephthalate, the third molten resin 8a comprise resins having gas barrier property such as ethylene vinyl alcohol, polyamide, etc., and the second molten resin 7a comprise a blend resin” (Column 4, line 67- Column 5, line 5).

Polyamides are commonly known as nylons. Nakamura teaches, “wall-thickness distributions of the layers can also be adjusted by suitably selecting and controlling the injection conditions.

With regard to claim 17, Nakamura does not teach the second molten resin to be of recycled material. Krishnakumar et al. 2, however, teaches a multi-layered preform where virgin PET material is used to produce the outer surface layers of a preform and where the inner materials “may be selected from a variety of materials including colored PET, recycled PET, MXD-6 nylon; copolyesters, polypropylene (PP), PP/PET blend, polyacrylonitrile polycarbonate, and the like.” (Column 3, lines 55-62). Krishnakumar et al. 2 further teaches the outer material to consist of 40-60 % and the other materials to range from 30 – 40 % and 10 – 20 % respectively (Column 3, line 63- Column 4, line 4).

Nakamura also does not specifically teach the mold tool used and how the material flows are controlled. Krishnakumar et al. 1 and van Manen et al. both teach co-injection molds for such preforms that use a needle to selectively control the flows of materials as discussed above.

Nakamura also does not specifically teach a secondary injection of recycled material into the mold cavity following the cooling of the originally molded material to compensate for the shrinkage of the material during cooling. Van Manen et al. teaches the injection of material to compensate for the shrinkage as discussed above.

It would have been obvious to one having ordinary skill in the art at the time of invention to produce a multi-layered preform as taught by Nakamura out of layers of virgin PET as a surface layer as taught by Krishnakumar et al. 2, a barrier layer as taught by Nakamura, and a layer of recycled PET as taught by Krishnakumar et al. 2 in order to use the method as taught by Nakamura to produce a structure as taught by Krishnakumar et al. 2 with barrier properties in a cost effective manner. It would have been further obvious to one having ordinary skill in the art at the time of invention to use a mold tool as taught by Krishnakumar et al. 1 or van Manen et al. to preform the procedure as taught by Nakamura in order to have precise control over the selective injection of each material through each nozzle by the movement of a supply control needle. It would have been further obvious to one having ordinary skill in the art at the time of invention to modify the process as taught by Nakamura by injecting material into the cavity after the material has cooled in order to compensate for shrinkage of the material due to cooling as taught by van Manen et al. and to inject recycled material in order to reduce costs as the material injected after the cooling step will not be exposed to the inner surface of the formed preform.

With regard to claim 18, Nakamura does not specifically teach the percentage composition of the preform in regards to material but does teach that the layer thickness

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distribution can be varied with molding conditions. Krishnakumar et al. 2 teaches the outer material to consist of 40-60 % and the other materials to range from 30 – 40 % and 10 – 20 % respectively (Column 3, line 63- Column 4, line 4). Krishnakumar et al. 1 teaches different layer thickness distributions for different molding conditions, and has conditions where a thin layer of barrier material is produced with a range that includes 5% of the thickness of the overall preform. The percent thickness of a layered object would approximately equal the volume percentage. It would have been obvious to one having ordinary skill in the art at the time of invention to produce a layered preform according to the method as taught by Nakamura with a layer thickness distribution that minimizes cost and gives the most desirable properties to the finished product and the exact thickness distribution would be a result effective variable based upon the unclaimed variables of cost of the materials used, temperature of the molten resins, time per molding cycle, etc. and it would have been obvious to determine the thickness distribution through routine experimentation.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 4,774,047 (Nakamura et al.), U.S. Patent No. 4,863,665 (Schad et al.), U.S. Patent No. 5,098,274 (Krishnakumar et al. 3), U.S. Patent No. 6,099,780 (Gellert), U.S. Patent No. 6,274,075-B1 (Gellert et al.), and U.S. Patent No. 6,350,401-B1 (Gellert et al.) are cited as art of interest to show the current state of the art at the time of invention

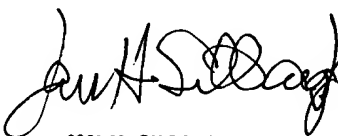
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey P. Shipsides whose telephone number is 703-306-0311. The examiner can normally be reached on Monday - Friday 9 AM till 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jan H Silbaugh can be reached on 703-308-3829. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Geoffrey P. Shipsides/gps
March 19, 2002


JAN H. SILBAUGH
SUPERVISORY PATENT EXAMINER
ART UNIT ~~17~~ 1732

03/20/02



Paper No.

Notice of Non-Compliant Amendment (37 CFR 1.121)

The amendment filed on 2/23/01 is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121, as amended on September 8, 2000 (see 65 Fed. Reg. 54603, Sept. 8, 2000, and 1238 O.G. 77, Sept. 19, 2000). In order for the amendment to be compliant, applicant must supply the following omissions or corrections in response to this notice.

THE FOLLOWING ITEMS ARE REQUIRED FOR COMPLIANCE WITH RULE 1.121 (APPLICANT NEED NOT RE-SUBMIT THE ENTIRE AMENDMENT):

- ☒ 1. A clean version of the replacement paragraph(s)/section(s) is required. See 37 CFR 1.121(b)(1)(ii).
- ☐ 2. A marked-up version of the replacement paragraph(s)/section(s) is required. See 37 CFR 1.121(b)(1)(iii).
- ☐ 3. A clean version of the amended claim(s) is required. See 37 CFR 1.121(c)(1)(i).
- ☐ 4. A marked-up version of the amended claim(s) is required. See 37 CFR 1.121(c)(1)(ii).

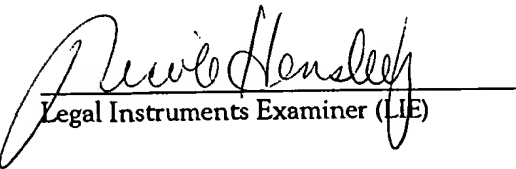
Explanation: _____

(LIE: Please provide specific details for correction to assist the applicant. For example, "the clean version of claim 6 is missing.")

For further explanation of the amendment format required by 37 CFR 1.121, see MPEP § 714 and the USPTO website at <http://www.uspto.gov/web/offices/dcom/olia/pbg/sampleaf.pdf>. ~~A condensed version of a sample amendment format is attached.~~

☒ **PRELIMINARY AMENDMENT:** Unless applicant supplies the omission or correction to the preliminary amendment in compliance with revised 37 CFR 1.121 noted above within ONE MONTH of the mail date of this letter, examination on the merits may commence without entry of the originally proposed preliminary amendment. This notice is not an action under 35 U.S.C. 132, and this ONE MONTH time limit is not extendable.

☐ **AMENDMENT AFTER NON-FINAL ACTION:** Since the above-mentioned reply appears to be *bona fide*, applicant is given a TIME PERIOD of ONE MONTH or THIRTY DAYS from the mailing of this notice, whichever is longer, within which to supply the omission or correction noted above in order to avoid abandonment. EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136(a).


Legal Instruments Examiner (LIE)